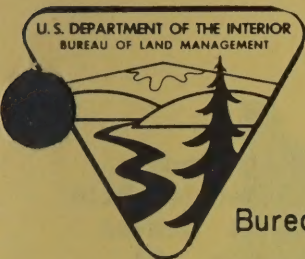


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TECHNICAL NOTE

Filing Code 7413

Date Issued February 20, 1970

Bureau of Land Management U.S. DEPARTMENT OF THE INTERIOR

FOURWING SALTBUUSH

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Introduction. Fourwing saltbush (*Atriplex canescens*) is considered one of the most valuable forage shrubs in the southwest and intermountain regions. Its abundance, size, large volume of forage, evergreen habit, palatability, and nutritive ratings all contribute to highly-valued characteristics by range and game managers. More recently, recognition of its adaptability to a wide variety of soil types has resulted in extensive restoration to western livestock and big game ranges.



Figure 1. Fourwing saltbush has a wide assortment of growth forms. This tall-growing form has attained a height of over five feet. Low-growing forms usually mature at a height of about two feet.

BOTANICAL DATA

Description. Fourwing saltbush is a grayish-white shrub, branching almost freely from the surface of the ground. Twigs are pale, straw-colored to white scurfy, with branlike scales, often becoming sharp- or spiny-tipped; leaves are white scurfy, narrowly oblong, to 2 inches long and 3/8 inch wide. It occasionally attains a height of over five feet, though usually lower (Figure 1).

Flowers containing stamens, and others with pistils, are usually found on different plants (Figure 2). Distribution of sexes is about equal. The flowers, small, yellowish or greenish in color, are borne on panicles at the end of stems of current-year growth, and are followed on fruiting (female) plants by conspicuous clusters of fourwinged, one-celled pods called utricles (Figure 3). The shrub obtains its name from the four projecting wings on the seed case. The seed is formed inside the utricle and is about one-half to two-thirds the size of alfalfa (Medicago sp.) seed.

Characteristics. Fourwing saltbush is generally located in dry, moderately saline or alkaline sites, on plains, foothills and intermountain valleys of creosotebush (Larrea sp.), sagebrush (Artemisia sp.), and pinyon (Pinus monophylla) belts. The species is able to exist on land heavily impregnated with white alkali, as well as areas of saline or alkaline soils. It prefers deep, sandy soil, although occasionally grows on sand dunes, and may be found on gravelly washes, mesas, ridges, and slopes.

The shrub has the ability to absorb and store moisture in its woody parts during the spring, when water is abundant and temperatures are too cold for growth. It uses moisture during summers, when temperatures are suitable, although other vegetation may be drying and the ground appears depleted of water.

During the winter, the protein and fat content for this plant is adequate for maintenance of good animal body weight.

MANAGEMENT INFORMATION

Grazing Preference. The leaves, stems, flowers, and fruits are cropped by all classes of range livestock, except horses, which graze the species only in winter when other forage is sparse. Deer usually relish it, particularly as winter browse.

Planting. Good stands of fourwing saltbush have been achieved by aerial seeding between chainings, particularly in sandy soils of juniper-pinyon types in the Colorado River Basin. Less successful results have been obtained in the Great Basin. Fourwing seed is frequently included in mixture plantings containing grasses and forbs. Hand broadcasting seed in favorable sites may be preferable if seed is in short supply.

When planting fourwing saltbush, it is important that the strain be from a source growing in climatic and soil conditions similar to the site being planted.



Figure 2. Pollen and seed producing flowers are usually found on separate plants. Here a pollen producing plant is seen in the foreground, while a seed producing plant is seen in the background.



Figure 3. Clusters of fourwinged, one-celled pods, called utricles.

Small seedlings are highly susceptible to frost and "damping off" (a fungus infection). Most successful stands have resulted after late fall or early winter plantings. Care should be taken to plant seed as late in the fall as possible to prevent precocious germination resulting from unseasonably warm, short period temperatures.

Seed Harvest. Fourwing saltbush seed can be easily harvested by hand, pulling the utricles from the bushes onto canvasses or into containers. Harvesting can be extended over a period of several weeks and is usually accomplished from mid-October through May. However, harvesting should be completed prior to January to reduce unnecessary seed losses by wind or animals. The number of seeds per pound varies from 25,000 to 150,000. The duration of good seed viability is 5 years.

Seed Availability and Cost. Fourwing saltbush seed is usually available from commercial seed suppliers throughout the southwest and intermountain regions. Seed costs average about \$1.00/lb.

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